ABSTRACT

In a data communication network, data route changes happen frequently due to various reasons. For the path specific resource management signaling, such route changes would trigger large amount of signaling actions. Some of the signaling action requires a complicated process and may take a long time. This may cause service interruption in extreme cases. This invention proposed a method for signaling state management along the old data path to achieve fast signaling state re-establishment. Instead of removing the signaling states along the old data path explicitly or by time-out, the invention preserved the signaling state along the old data path with reduced state management. In the reduced state management, network resources that are held by the states along the old data path are released and minimum information is retained. The states become "dormant" states that do not require active monitoring from the network. When the old path is in use again, the states could be restored and network resources be re-allocated fast. This would be much faster than re-establishing the whole state from scratch. This invention also provides a method for fast recovery from transient route changes by allowing the signaling aware nodes at the

crossover point of the data path to monitor the status of old path. This way, the signaling system could quickly re-establish the necessary state along the old path once it's found available again.